

IN THE CLAIMS:

Please cancel Claims 2, 5 and 26 without prejudice to or disclaimer of the subject matter presented therein.

Please amend Claims 1, 3, 20 and 23 as follows.

1. (Currently Amended) An image data encryption method of encrypting encoded image data which is constituted by a plurality of encoded data blocks, comprising:

a step of inputting ~~image data, which is constituted by a plurality of data blocks, for each~~ a data block;

a determination step of determining whether the ~~input-data block~~ inputted in said inputting step is an object to be encrypted;

an encryption step of encrypting the data block when it is determined in the determination step that the data block ~~as is~~ is the object to be encrypted ~~is input~~;

a discrimination step of discriminating whether the data block is an object to be reproduced at a decoder in a scrambling mode or in a non-scrambling mode; and

an addition step of adding terminating information to specify a terminating position of significant data for decoding to a start starting position of the data block encrypted in the encryption step if it is discriminated in the discrimination step that the data block is an object to be reproduced in the non-scrambling mode, and adding the terminating information to an ending position of the data block encrypted in the encryption step if it is discriminated in the discrimination step that the data block is an object to be reproduced in the scrambling mode, wherein the terminating information is used to notify the decoder to not perform decoding for the subsequent data to the end of the data block;

~~a switching step of switching whether the addition step should be executed; and~~

~~an output step of outputting a data block which is determined in the determination step as a data block not to be encrypted and a data block generated via the switching step.~~

2. (Canceled)

3. (Currently Amended) The method according to claim 2, wherein said addition step includes a step of adding information representing whether the data block is-has been encrypted is-added-immediately-after the terminating information.

4. (Original) The method according to claim 1, wherein, in the terminating information addition step, the terminating information is replaced with the encrypted image data.

5. (Canceled)

6. (Original) The method according to claim 1, further comprising an encoding step of encoding (compressing) image data,
wherein in the input step, encoded (compressed) image data is input.

7. (Original) The method according to claim 6, wherein the encoding step comprises
a frequency conversion step of converting data in a spatial domain into data in a frequency domain,
a quantization step of quantizing the data in the frequency domain and calculating a quantization index, and
an entropy encoding step of entropy-encoding the quantization index.

8. (Original) The method according to claim 7, wherein the entropy encoding step comprises
a region division step of dividing a predetermined frequency region into a plurality of rectangular regions which do not overlap each other,
an entropy encoding step of entropy-encoding the quantization index for each bit plane in each rectangular region, and
an entropy codestream division step of dividing an entropy codestream in the rectangular region into at least a set of codestreams.

9. (Original) The method according to claim 8, wherein, in the addition step, the terminating information is added to each set of codestreams in the rectangular region.

10. (Original) The method according to claim 6, wherein the encoding step comprises a frequency conversion step of converting data in a spatial domain into data in a frequency domain,
a quantization step of quantizing the data in the frequency domain and calculating a quantization index, and
an entropy encoding step of entropy-encoding the quantization index, and
in the encryption step, encryption processing is executed for the entropy-encoded entropy codestream.

11. (Original) The method according to claim 6, wherein the encoding step comprises a frequency conversion step of converting data in a spatial domain into data in a frequency domain,
a quantization step of quantizing the data in the frequency domain and calculating a quantization index, and
an entropy encoding step of entropy-encoding the quantization index, and
in the encryption step, encryption processing is executed for the quantized quantization index.

12. (Original) The method according to claim 6, wherein the encoding step comprises a frequency conversion step of converting data in a spatial domain into data in a frequency domain,
a quantization step of quantizing the data in the frequency domain and calculating a quantization index, and
an entropy encoding step of entropy-encoding the quantization index, and
in the encryption step, encryption processing is executed for the frequency-converted data in the frequency domain.

13. (Original) The method according to claim 10, wherein the entropy encoding step comprises

a region division step of dividing a predetermined frequency region into a plurality of rectangular regions which do not overlap each other,

an entropy encoding step of executing entropy-encoding for each bit plane in each rectangular region to generate an entropy codestream, and

an entropy codestream division step of dividing an entropy codestream in the rectangular region into at least a set of codestreams.

14. (Original) The method according to claim 13, wherein, in the addition step, the terminating information is added to each set of codestreams in the rectangular region.

15. (Withdrawn) An image data conversion method of converting image data containing encrypted data for playback processing, comprising:

a step of inputting image data, which is constituted by a plurality of data blocks, for each data block;

a first determination step of determining whether the input data block is encrypted;

a second determination step of, when it is determined in the first determination step that the data block is encrypted, determining whether decryption key information is present;

a decryption step of, when it is determined in the second determination step that the key information is present, decrypting the input data block in accordance with the key information and, when terminating information to specify a terminating position of significant data is present at a start position of the decrypted data block, invalidating the terminating information; and

an output step of outputting the data block decrypted in the decryption step, a data block which is determined in the first determination step as an unencrypted data block, and a data block for which it is determined in the second determination step that no key information is present.

16. (Withdrawn) The method according to claim 15, wherein invalidation of the terminating information in the decryption step is done by deleting the terminating information or placing the terminating information at an end of the decrypted data block.

17. (Withdrawn) An image data conversion method of converting image data containing encrypted data for playback processing, comprising:

- a step of inputting image data, which is constituted by a plurality of data blocks, for each data block;

- a first determination step of determining whether the input data block is encrypted;

- a second determination step of, when it is determined in the first determination step that the data block is encrypted, determining whether decryption key information is present;

- a third determination step of, when it is determined in the second determination step that the key information is not present, and terminating information to specify a terminating position of significant data is present at a start position of the input data block, determining whether the terminating information should be invalidated;

- a terminating information invalidation step of, when it is determined in the third determination step that the terminating information should be invalidated, removing the terminating information or placing the terminating information at an end of the data block;

- a decryption step of, when it is determined in the second determination step that the key information is present, decrypting the input data block; and

- an output step of outputting a data block which is determined in the first determination step as an unencrypted data block, a data block for which it is determined in the third determination step that the terminating information should not be invalidated, a data block whose terminating information is invalidated in the terminating information invalidation step, and the data block decrypted in the decryption step.

18. (Withdrawn) The method according to claim 15, wherein the image data input in the input step is encoded (compressed).

19. (Withdrawn) The method according to claim 18, further comprising a decoding (decompression) step of decoding (decompressing) the encoded (compressed) data block output in the output step.

20. (Currently Amended) An image data encryption apparatus for encrypting encoded image data which is constituted by a plurality of encoded data blocks, comprising:

~~input means for inputting image data, which is constituted by a plurality of data blocks, for each~~ data block;

determination means for determining whether the ~~input~~ data block inputted by said input means is an object to be encrypted;

encryption means for encrypting the data block when said determination means determines that the data block ~~as is~~ is the object to be encrypted ~~is input~~;

discrimination means for discriminating whether the data block is an object to be reproduced at a decoder in a scrambling mode or in a non-scrambling mode; and

~~addition means for adding terminating information to specify a terminating position of significant data for decoding to a start~~ starting position of the data block encrypted by said encryption means if it is discriminated by said discrimination means that the data block is an object to be reproduced in the non-scrambling mode, and adding the terminating information to an ending position of the data block encrypted by said encryption means if it is discriminated by said discrimination means that the data block is an object to be reproduced in the scrambling mode, wherein the terminating information is used to notify the decoder to not perform decoding for the subsequent data to the end of the data block;

~~switching means for switching whether said addition means should be executed; and~~

~~output means for outputting a data block which is determined by said determination means as a data block not to be encrypted and a data block generated via said switching means.~~

21. (Withdrawn) An image data conversion apparatus for converting image data containing encrypted data for playback processing, comprising:

input means for inputting image data, which is constituted by a plurality of data blocks, for each data block;

first determination means for determining whether the input data block is encrypted;

second determination means for, when said first determination means determines that the data block is encrypted, determining whether decryption key information is present;

decryption means for, when said second determination means determines that the key information is present, decrypting the input data block in accordance with the key information and, when terminating information to specify a terminating position of significant data is present at a start position of the decrypted data block, invalidating the terminating information; and

output means for outputting the data block decrypted by said decryption means, a data block which is determined by said first determination step as an unencrypted data block, and a data block for which it is determined by said second determination means that no key information is present.

22. (Withdrawn) An image data conversion apparatus for converting image data containing encrypted data for playback processing, comprising:

input means for inputting image data, which is constituted by a plurality of data blocks, for each data block;

first determination means for determining whether the input data block is encrypted;

second determination means for, when said first determination means determines that the data block is encrypted, determining whether decryption key information is present;

third determination means for, when said second determination means determines that the key information is not present, and terminating information to specify a terminating position of significant data is present at a start position of the input data block, determining whether the terminating information should be invalidated;

terminating information invalidation means for, when said third determination means determines that the terminating information should be invalidated, removing the terminating information or placing the terminating information at an end of the data block;

decryption means for, when said second determination means determines that the key information is present, decrypting the input data block; and

output means for outputting a data block which is determined by said first determination means as an unencrypted data block, a data block for which it is determined by said third determination means that the terminating information should not be invalidated, a data block whose terminating information is invalidated by said terminating information invalidation means, and the data block decrypted by said decryption means.

23. (Currently Amended) ~~A computer program~~computer-readable storage medium embodying a computer program for causing an apparatus to function~~which functions~~ as an image data encryption apparatus for encrypting image data which is constituted by a plurality of encoded data blocks, characterized by functioning as:

input means for inputting ~~image data, which is constituted by a plurality of data blocks, for each a~~ data block;

determination means for determining whether the ~~input data block~~ input by said input means is an object to be encrypted;

encryption means for encrypting the data block when said determination means determines that the data block ~~as is~~ is the object to be encrypted~~is input~~;

discrimination means for discriminating whether the data block is an object to be reproduced at a decoder in a scrambling mode or in a non-scrambling mode; and

addition means for adding terminating information ~~to specify a terminating position of significant data for decoding to a start~~ starting position of the data block encrypted by said encryption means if it is discriminated by said discrimination means that the data block is an object to be reproduced in the non-scrambling mode, and adding the terminating information to an ending position of the data block encrypted by said encryption means if it is discriminated by said discrimination means that the data block is an object to be reproduced in the scrambling mode, wherein the terminating information is used to notify the decoder to not perform decoding for the subsequent data to the end of the data block;

switching means for switching ~~whether said addition means should be executed; and~~

~~output means for outputting a data block which is determined by said determination means as a data block not to be encrypted and a data block generated via said switching means.~~

24. (Withdrawn) A computer program which functions as an image data conversion apparatus for converting image data containing encrypted data for playback processing, characterized by functioning as:

input means for inputting image data, which is constituted by a plurality of data blocks, for each data block;

first determination means for determining whether the input data block is encrypted;

second determination means for, when said first determination means determines that the data block is encrypted, determining whether decryption key information is present;

decryption means for, when said second determination means determines that the key information is present, decrypting the input data block in accordance with the key information and, when terminating information to specify a terminating position of significant data is present at a start position of the decrypted data block, invalidating the terminating information; and

output means for outputting the data block decrypted by said decryption means, a data block which is determined by said first determination step as an unencrypted data block, and a data block for which it is determined by said second determination means that no key information is present.

25. (Withdrawn) A computer program which functions as an image data conversion apparatus for converting image data containing encrypted data for playback processing, characterized by functioning as:

input means for inputting image data, which is constituted by a plurality of data blocks, for each data block;

first determination means for determining whether the input data block is encrypted;

second determination means for, when said first determination means determines that the data block is encrypted, determining whether decryption key information is present;

third determination means for, when said second determination means determines that the key information is not present, and terminating information to specify a terminating position of significant data is present at a start position of the input data block, determining whether the terminating information should be invalidated;

terminating information invalidation means for, when said third determination means determines that the terminating information should be invalidated, removing the terminating information or placing the terminating information at an end of the data block;

decryption means for, when said second determination means determines that the key information is present, decrypting the input data block; and

output means for outputting a data block which is determined by said first determination means as an unencrypted data block, a data block for which it is determined by said third determination means that the terminating information should not be invalidated, a data block whose terminating information is invalidated by said terminating information invalidation means, and the data block decrypted by said decryption means.

26. (Canceled)

27. (Withdrawn) A computer-readable storage medium characterized by storing a computer program of claim 24.

28. (Withdrawn) A computer-readable storage medium characterized by storing a computer program of claim 25.